

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently amended). A piston crown for a piston of a large-bore internal combustion engine comprising:

a piston crown, said piston crown having a centerline and a diameter of at least 180 millimeters;

a crown bowl formed in said piston crown, said crown bowl having a bowl sidewall, said bowl sidewall defining, with respect to the centerline, a maximum bowl radius and a minimum bowl radius;

a piston squish face circumscribing said crown bowl; and

a cooling chamber positioned below said piston squish face and in relation to said bowl sidewall;

wherein said bowl sidewall has an acute re-entrant angle relative to said piston squish face, wherein said maximum bowl radius exceeds said bowl edge radius, and wherein said maximum bowl radius is disposed further from said squish face than said minimum bowl radius is disposed from said squish face, wherein said crown bowl further includes a maximum bowl depth, wherein said crown bowl further includes a substantially frustoconical inner surface extending between the maximum bowl depth and the centerline, wherein a lower curve radius defines a lower curve of said crown bowl, wherein an upper curve radius defines an upper curve of said crown bowl, and wherein a

sidewall tangent is formed by an intersection of the upper and lower curve radii, wherein the sidewall tangent defines an orientation of said bowl sidewall; and wherein said re-entrant angle is defined by an intersection of the sidewall tangent with respect to a plane parallel to said squish face, wherein said re-entrant angle is measured clockwise from the plane, and wherein the re-entrant angle is selected from a range of about 50 degrees to about 77 degrees, the maximum bowl radius is selected from a range of about 87mm to about 94mm, the minimum bowl radius is selected from a range of about 77mm to about 89mm, the maximum bowl depth is about 30mm, the lower curve radius is about 10mm, the upper curve radius is about 6mm, and the piston crown diameter is about 263mm.

Claim 2 (Cancelled). ~~The piston crown of Claim 1, wherein a lower curve radius defines a lower curve of said crown bowl, wherein an upper curve radius defines an upper curve of said crown bowl, and wherein a sidewall tangent is formed by an intersection of the upper and lower curve radii, wherein the sidewall tangent defines an orientation of said bowl sidewall; and wherein said re-entrant angle is defined by an intersection of the sidewall tangent with respect to a plane parallel to said squish face, wherein said re-entrant angle is measured clockwise from the plane.~~

Claim 3 (Currently Amended). A large-bore diesel engine, comprising:

a cylinder defined by a cylinder liner having a liner wall; and

a piston having a centerline and a diameter of at least 180 millimeters, said piston being reciprocable within said cylinder liner, said piston having a piston crown comprising:

a crown bowl having a bowl sidewall, said bowl sidewall defining, with respect to the centerline, a maximum bowl radius and a minimum bowl radius;

a piston squish face circumscribing said crown bowl; and

a cooling chamber positioned below said piston squish face and in relation to said bowl sidewall;

wherein said bowl sidewall has an acute re-entrant angle relative to said piston squish face, wherein said maximum bowl radius exceeds said bowl edge radius, and wherein said maximum bowl radius is disposed further from said squish face than said minimum bowl radius is disposed from said squish face, wherein said crown bowl further includes a maximum bowl depth, wherein said crown bowl further includes a substantially frustoconical inner surface extending between the maximum bowl depth and the centerline, wherein a lower curve radius defines a lower curve of said crown bowl, wherein an upper curve radius defines an upper curve of said crown bowl, and wherein a sidewall tangent is formed by an intersection of the upper and lower curve radii, wherein the sidewall tangent defines an orientation of said bowl sidewall; and wherein said re-entrant angle is defined by an intersection of the sidewall tangent with respect to a plane parallel to said squish face, wherein said re-entrant angle is measured clockwise from the plane, and wherein the re-entrant angle is selected from a range of about 50 degrees to about 77 degrees, the maximum bowl radius is selected from a range of about 87mm to

about 94mm, the minimum bowl radius is selected from a range of about 77mm to about 89mm, the maximum bowl depth is about 30mm, the lower curve radius is about 10mm, the upper curve radius is about 6mm, and the piston crown diameter is about 263mm.

Claim 4 (Cancelled). ~~The engine of Claim 3, wherein a lower curve radius defines a lower curve of said crown bowl, wherein an upper curve radius defines an upper curve of said crown bowl, and wherein a sidewall tangent is formed by an intersection of the upper and lower curve radii, wherein the sidewall tangent defines an orientation of said bowl sidewall; and wherein said re-entrant angle is defined by an intersection of the sidewall tangent with respect to a plane parallel to said squish face, wherein said re-entrant angle is measured clockwise from the plane.~~

Claim 5 (Original). The engine of Claim 3, further comprising an anti-polish ring positioned at an upper portion of said liner wall adjacent said piston crown when said piston is at a top dead center position in said cylinder.

Claim 6 (Original). The engine of Claim 5, wherein said piston has a piston ring package, and wherein said anti-polishing ring has a predetermined height such that said piston ring package does not come into contact with said anti-polishing ring during the reciprocation of said piston; and wherein said anti-polish ring projects a selected distance into said cylinder, and wherein a portion of said piston adjacent said piston crown is recessed a distance substantially equal to said selected distance.

Claim 7 (Original). The engine of Claim 6, wherein said liner wall has an annular slot formed therein; and wherein said anti-polish ring is received by said slot.

Claim 8 (Cancelled). ~~The engine of Claim 7, wherein a lower curve radius defines a lower curve of said crown bowl, wherein an upper curve radius defines an upper curve of said crown bowl, and wherein a sidewall tangent is formed by an intersection of the upper and lower curve radii, wherein the sidewall tangent defines an orientation of said bowl sidewall; and wherein said re-entrant angle is defined by an intersection of the sidewall tangent with respect to a plane parallel to said squish face, wherein said re-entrant angle is measured clockwise from the plane.~~

Claim 9 (Original) The engine of Claim 6, wherein said liner wall and said anti-polish ring are integrally formed as a single piece.

Claim 10 (Cancelled). ~~The engine of Claim 9, wherein a lower curve radius defines a lower curve of said crown bowl, wherein an upper curve radius defines an upper curve of said crown bowl, and wherein a sidewall tangent is formed by an intersection of the upper and lower curve radii, wherein the sidewall tangent defines an orientation of said bowl sidewall; and wherein said re-entrant angle is defined by an intersection of the sidewall tangent with respect to a plane parallel to said squish face, wherein said re-entrant angle is measured clockwise from the plane.~~

Claim 11 (Cancelled). ~~An internal combustion engine, comprising:~~
~~—— a cylinder defined by a cylinder liner having a liner wall;~~
~~—— a piston reciprocable within said cylinder; and~~
~~—— an anti-polish ring positioned at an upper portion of said liner wall adjacent said piston when said piston is at a top dead-center position in said cylinder;~~

—wherein said liner wall and said anti-polish ring are integrally formed as a single piece.

Claim 12 (Cancelled). ~~The engine of Claim 11, wherein said piston has a piston ring package, and wherein said anti-polishing ring has a predetermined height such that said piston ring package does not come into contact with said anti-polishing ring during the reciprocation of said piston; and wherein said anti-polish ring projects a selected distance into said cylinder, and wherein a portion of said piston adjacent said piston crown is recessed a distance substantially equal to said selected distance.~~

Claim 13 (Cancelled). ~~The piston crown of Claim 1, wherein the re-entrant angle is selected from a range of about 50 degrees to about 77 degrees.~~

Claim 14 (Cancelled). ~~The piston crown of Claim 1, wherein the maximum bowl radius is selected from a range of about 87mm to about 94mm.~~

Claim 15 (Cancelled). ~~The piston crown of Claim 1, wherein the minimum bowl radius is selected from a range of about 77mm to about 89mm.~~

Claim 16 (Cancelled). ~~The piston crown of Claim 2, wherein the lower curve radius is about 10mm.~~

Claim 17 (Cancelled). ~~The piston crown of Claim 2, wherein the upper curve radius is about 6mm.~~

Claim 18 (Previously presented). The piston crown of Claim 1, further comprising a bowl center depth, wherein said bowl center depth is about 5mm.

Claim 19 (Cancelled), ~~The piston crown of Claim 1, wherein said crown bowl further includes a maximum bowl depth, wherein said crown bowl further includes a substantially frustoconical inner surface extending between the maximum bowl depth and the centerline.~~

Claim 20 (Cancelled), ~~The large-bore diesel engine of Claim 3, wherein said crown bowl further includes a maximum bowl depth, wherein said crown bowl further includes a substantially frustoconical inner surface extending between the maximum bowl depth and the centerline.~~